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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/626,793	07/26/2000	Moshe Finarov	1268-093A	8657

7590

03/13/2003

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EXAMINER

ESPLIN, DAVID B

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/626,793

Applicant(s)

FINAROV, MOSHE

Examiner

D. Ben Esplin

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The final line of claim 10 appears to have been cut short at "...workpiece at said desired portions of the." For purposes of examination Examiner has considered the claim as ending at "workpiece".

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,943,733.

FIG. 2 of Mori shows an integrated apparatus for optical monitoring of a semiconductor workpiece (wafer W) including a supporting assembly (stage 22), an optical monitoring unit (projection lens 20, focus sensor 30, and off-axis microscope 32). Although the optical unit of Mori does not specifically show an optical window, since light is shown both leaving and entering the optical unit at both the focus sensor 30 and the microscope 32, an optical window enabling the monitoring of the workpiece would be inherent in the optical unit of Mori. Further, although the shape and composition of the optical window is not disclosed, different shaped openings and types of glass are well known to influence the path of light passing through them (the use of lenses and a pupil filter in the exposure apparatus of Mori, for example). Therefore, it would have been obvious to tailor the optical window in the monitoring apparatus of Mori in order to more effectively determine the focus position and alignment of the workpiece.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori as applied to claims 1-5, and 8-13 above, and further in view of U.S. Patent No. 5,812,705 to Wang et al.

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Mori does not disclose the specific pattern recognition means disposed in the microscope 32, and thus does not teach of using a spectrophotometer. However, Wang discloses that spectrophotometers are well known means for pattern recognition. Therefore, it would have been obvious to include a spectrophotometer in the apparatus of Mori, as an art recognized specific embodiment of a pattern recognition utility.

Claims 7, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori as applied to claims 1-5, and 8-13 above, and further in view of U.S. Patent No. 5,757,671 to Drevillon et al.

The optical unit of Mori does not include an ellipsometer, or another art recognized method for determining the thickness of the workpiece. But FIG. 1 of Drevillon shows an ellipsometer for determining the thickness of a workpiece (col. 1 lines 11-12). Drevillon further teaches that including such an ellipsometer in an optical unit for monitoring a workpiece was well known for providing further accuracy and control in an exposure system (col. 1 lines 25-29). In view of the teachings of Drevillon, it would have been obvious to include an ellipsometer in the optical unit of Mori in order to determine the thickness of the workpiece, thereby increasing the accuracy and control of the exposure apparatus.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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U.S. Patent No. 5,942,357 to Ota discloses an apparatus that includes both alignment and auto-focus utilities.

U.S. Patent No. 5,455,679 to Houryu et al. discloses that using different types of glass as an optical window in an optical unit was well known in the art.


U.S. Patent No. 6,426,502 to Finarov is the parent of the subject application.


U.S. Patent No. 6,057,908 to Ota discloses an apparatus that includes both alignment and auto-focus utilities.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Ben Esplin whose telephone number is (703) 305-4022. The examiner can normally be reached on Mon.-Fri. (8am-4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell E. Adams can be reached on (703) 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
DBE  
March 7, 2003

  
RUSSELL ADAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800